

Silicon Carbide Foam: Extreme Performance in a Lightweight Form

Huntingdon ... 8 July 2014 ... Silicon carbide (SiC) foam, available from Goodfellow, provides the exceptional hardness, high-temperature durability and performance of solid silicon carbide, but in an extremely lightweight and versatile foam structure. This combination of properties is highly valued in a range of industries, including aerospace, defence and semiconductor manufacturing.

The matrix of cells and ligaments of silicon carbide foam is completely repeatable, regular and uniform throughout the material, yielding a rigid, highly porous and permeable structure with a controlled density of metal per unit volume. Characteristics of SiC foam include:

- Exceptional hardness (Mohs 9) and performance – outstanding resistance to scratches, wear and corrosion
- Structural stability at high temperatures – can operate up to 2200°C
- High thermal and electrical conductivity – unlike most other ceramics
- Low thermal expansion – excellent thermal shock properties
- High surface area-to-volume ratio – very lightweight
- Low flow resistance – high filtration efficiency

In applications, advantages derive from both the properties of SiC and the porosity/high surface area of the foam structure:

- High-temperature filters
- Rocket nozzles
- Heat shielding elements
- Heat exchangers
- Gas diffusers
- Porous electrodes
- Absorbers of electromagnetic radiation

Silicon carbide foam is available from Goodfellow stock in a standard pore size of 24 pores per centimetre (60 ppi), with a bulk density of 0.29 g.cm⁻³, a porosity of 91% and a thickness of 10mm. However, other porosities, densities and dimensions may be available upon request.

For more information about silicon carbide foam, call Goodfellow on +44 1480 424 800, email info@goodfellow.com or visit the online Goodfellow Catalogue at www.goodfellow.com.

Goodfellow is a leading supplier of metals, polymers, ceramics and other materials to meet the needs of science and industry worldwide. The company specialises in supplying small quantities (a few grammes to a few kilos) of metals and materials for research, prototype development and specialised manufacturing applications. Standard products can be found online at the comprehensive Goodfellow Catalogue (www.goodfellow.com). In addition, Goodfellow is often able to supply larger quantities of metals and materials or items manufactured to specific requirements.

